Tracking Student Behaviour with Automatic SMS Alert to Parents

Dr.P.S.K.Patra[1],A.Sanil Kumar[2], G.Shreemukhi[3],

**[1]Computer Science and Engineering/Agni College Of Technology/ Head of Department,
Chennai, Tamil Nadu, India**

**[2, 3] Computer Science and Engineering/Agni College Of Technology/ Final Year,
Chennai, Tamil Nadu, India**

ABSTRACT

This paper describes about developing an android application for the parents which help in analyzing their ward's activities using a smart phone. In recent trend, usages of bulky desktops have been replaced by smartphone and iPhone. There are many applications that provide users with the information about the locality he/she wants to visit. In this application, the parent is provided with the information about to whom their ward is speaking and sending messages.
Keywords: Android, SMS, Ward, Smartphone ….

1. INTRODUCTION

ANDROID is a 20th century operating system which provides its users with millions of applications to interact and feel its interface. Android is a Linux-based operating system designed primarily for touch screen mobile devices such as smartphone's and tablet computers. It was developed by Android, Inc., which Google bought financially and was later purchased in 2005. Android is an open source and Google releases the code under the Apache License. It has a growing selection of third party applications, which can be acquired by users either through an app store such as Google Play or Play Store. The version history of the Android mobile operating system began with the release of the Android beta in November 2007. The first commercial version, Android 1.0, was released in September 2008. Most Android devices to date still run the older OS version 2.3 Gingerbread. The latest android OS version is Android 4.2 Jelly Bean.

There are many applications in Android smartphones that automatically sends sms alert regarding various issues. Application for triggering automatic SMS alerts to parents about their ward's activities is described in this paper. There are certain activities this app monitors.

The activities monitored by this application will be sms monitoring, call monitoring, call duration monitoring and accessing of illegal websites.
We set certain constraints with the expectation of privacy. When these limits/constraints set are exceeded, then an automatic sms alert is sent to ward's parent through ward's phone. This application is deployed into an android smart phone. Here we use MySQL server as a Back End. MSAccess is used as a tool for the database.

1.1PROBLEM ANALYSIS

In the Systems that have existed, there is no exact methodology to track the mobile users, especially students. Also it is tough job for the parents to monitor their wards. They aren't able to find calls and see the received SMS of their children mobile which will let the students in huge problem and also they're not able to help their children. We can trace the student mobile location using GPS system but

1

can't find out what the students are doing in their mobile

2. SOLUTIONS TO THE PROBLEM

In the application we develop, the parents' can keep their ward safe and secure. This application helps the parent's to keep tracking the activities of their ward. Application is designed with a QVGA interface. The application designed is used to access the service made available by a server. The major advantage of this app is that the parents' are able to make a secured environment for their wards so that they don't get involved in unwanted activities and waste time.

2.1 MOBILE CLIENT

An Android mobile client is an application that access a service made available by a server. The server is often (but not always) on another computer, in which case the client accesses the service by way of a network. The term was first applied to devices that were not capable of running their own stand-alone programs, but could interact with remote computers via a network.

To send the request to the server, the ward has to be a registered person in the server. The ward has to submit their name, password and other details to the server during the registration phase. All this information is stored in the database via server for future purpose.

2.2 SERVER

A server is a computer program running to serve the requests of other programs, the "clients". Thus, the "server" performs some computational task on behalf of "clients". The clients either run on the same computer or connect through the network.

Here the Server acts as the main resource for the client. Server is responsible for maintaining all the client information. So the server will process the ward's request and get the concerned data from the database.

2.3 CONSTRAINTS

In Call monitoring, the server will monitor all the calls that are coming to the wards' mobile phone. If the ward receives or makes calls more than the specified number of calls from the same number, an automatic updating in the database will occur regarding the calls that they've received.

In SMS monitoring, the server will monitor the messages that are sent & received by the ward, so that if they receive more than the specified number of messages, the server will keep track of the number and update that number in the database.

In Call duration monitoring, the server will monitor the call duration of the phone calls received by the ward, so that if they speak more than the specified time of the call duration, the server will keep track of the number and update that mobile number in the database.

For accessing of Illegal websites, the websites are blacklisted and white listed according to parental guidance. The Blacklisted websites are Social sites , torrents , videos which have adult content…The White listed websites are some of the search engines , educational sites , organizational websites , etc….When the ward access these blacklisted sites , an Automatic SMS alert is generated and is triggered to the concerned parent number .

2.4 FLOW OF OPERATION

The application (apk) is installed in the ward's android mobile phone. This application works in Android version 2.3 & above. The ward's mobile needs an internet connection. It is connected to the server through GPRS connection. The server recognizes the ward when he registers his name & password in the application during the registration phase. When the registration is over, the server's IP address is entered into the ward's android mobile by the parent. The assigned IP address is given in the ward's mobile which is used for server recognition. The server starts to monitor the ward. A data card is connected to the server which provides the Internet connection. Each and every activity of the ward using

2

the mobile is maintained as a database in the android mobile as well as in the server. The server is administered by the parent. Therefore an alert message is generated in ward's mobile and is sent to parent mobile. The application which is installed in the ward's mobile is secured by a third party application so that it cannot be uninstalled by the ward. The application gets refreshed for every 24 hours.

2.4.1 Mapping

The server is used to maintain all the records of the mobile client. When a call is made or received, the request is first analyzed by the server and gives permission to perform the required operation. Counters are set for each constraint with its limitation. A database is maintained. The server is connected with the database through the JDBC (Java Database Connectivity) connectivity. When a third party makes call/sends a message to the ward for the first time, it gets stored in the database. If the ward receives call again from the same third party , then the server verifies both the numbers and increases the counter value. If another person makes a call/sends message then it maintains a separate database for it and assigns the counter values accordingly. In this way the mapping is done. These operations happen even when the ward make calls or send messages. The counter values gets refreshed every 24 hours.

2.5 AUTOMATIC SMS ALERT

If the particular Ward makes / receives more number of calls & messages then an automatic SMS alert will be triggered and send to the concerned ward's parent's mobile number. The similar operation is carried out when the wards views any illegal websites which are black listed. The SMS is triggered from ward's mobile to parent mobile when the counter values exceed the limits.

Keywords: Server, Monitoring, Calls, SMS, Constraints, GPRS, Counter, Mapping, Android, JDBC, Client….
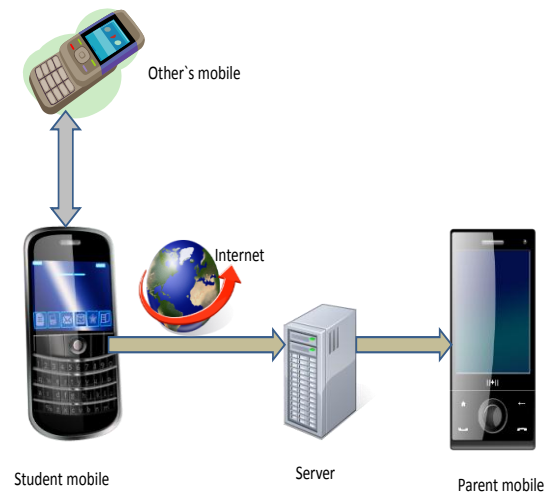
3. TABLES & FIGURES

Fig 1: Architecture flow

CONSTRAINTS	LIMITATIONS
SMS	**10 Messages**
CALL DURATION	**10 Min**
MISSED CALL	**5 Calls**
ILLEGAL WEBSITES	**Black listed sites**

Fig 2: Constraints table

4. CONCLUSION

Tracking of students' behavior with automatic SMS alert application is created which will help parents to know what their ward is doing in his/her mobile phone. This will help the parents to track their wards behavior.

3

ACKNOWLEDGMENTS

REFERENCES

[1] Yungeun Kim, Yohan Chon, and Hojung Cha, "Smartphone-Based Collaborative and Autonomous Radio fingerprinting,"IEEE TRANSACTIONS ON SYSTEMS, MAN, AND CYBERNETICS, vol.42, Jan.2012

[2] M. Satyanarayanan, "Pervasive computing: Vision and challenges," IEEE Pers. Commun., vol. 8, no. 4, page no. 10– 17, Aug. 2001.

[3] P. Bahl and V. N. Padmanabhan, "RADAR: An in-building RF-based user location and tracking system," in Proc. IEEE Conf. Comput. Commun. vol. 2, page no. 775–784, 2000.

[4] W. Oliver and H. Robert, "Pedestrian localisation for indoor environments," presented at the 10th Int. Conf.Ubiquitous Comput., Seoul, Korea, 2008. I . Constandache, S.Gaonkar, M.Sayler, R.R. Choudhury, and L. Cox, "Enloc: Energy-efficient localization for mobile phones", in Proc.IEEE INFOCOM, Apr.2009, pp.2716-2720

[5] T. Roos, P. Myllym¨aki, H. Tirri, P. Misikangas, and J. Siev¨anen, "A probabilistic approach to WLAN user location estimation," Int. J. WirelessInf. Netw, vol. 9, no. 3, pp. 155–164, 2002.

[6] M.B. Kjærgaard and C.V. Munk, "Hyperbolic location fingerprinting: a calibration-free solution for handling differences in signal strength," in Proc. 6th Int. Conf. Pervasive Comput. Commun. Hong Kong, 2008, pp. 110–116.

[7] S. Godha and G. Lachapelle, "Foot-mounted inertial system for pedestrian navigation," Meas. Sci. Technol., vol. 19, pp. 1–9, Jul. 2008.

[8] Ubisense Research Network. (2008). [Online]. Available: http://www.ubisense.net/

[9] B. P.Nissanka, C.Anit, and B.Hari, "The cricket location-support system," presented at the 6th Annu. Int. Conf.Mobile Comput. Netw., Boston, MA, 2000.

4